Umetco Minerals Corporation

INTERNAL CORRESPONDENCE

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To (Name)	Messrs F. V McMillen	Date	May 2, 1986
Division	D G. Millenbruch Danbury, CT 06817	Originating Dept	Niagara Falls, NY
Location		Area	
Area		Answering Letter Date	
Copy to	File	Subject	

The Department of Energy has written George Parker, as the representative of Umetco, informing him that the Niagara Site is no longer to be included in the "Formerly Utilized Sites Remedial Action Program" and that they "are notifying the Environmental Protection Agency and the State of New York of this action . ."

This should be of little concern to us at this time because of the extensive clean-up of the Technology Site over the past few years However, one of the enclosures with their letter contains a good summary of the radiological history of our site I thought you might find it interesting so I am forwarding the package for your leisure reading

D. J Hansen

DJH/dv/366h
Enclosure

Based on the descriptions herein, the site sounds like the current [illegible] site.

[illegible]
5-6-96

UCCNHT0000193

UMETCO MINERALS CORPORATION,
(Former Electro Metallurgical
"Electromet" Company)
Niagara Falls, New York

Site Function

Manhattan Engineer District (MED) contract W-7405-Eng-14, initiated on November 14, 1942, called for the Electro Metallurgical Company (Electromet) to design, engineer, construct, and operate a plant to produce uranium metal from uranium tetrafluoride (UF_4, green salt). Expansion of the facility occurred under construction contracts W-7405-Eng-227 and 255. Electromet, a subsidiary of Union Carbide and Cargon Corporation, received UF_4 from Union Carbide's Linde Air Products Division plant at Tonawanda, New York, reacted it with magnesium in induction furnaces to convert it to uranium metal, and then recast the metal into 110- to 135-kilogram ingots. The products were generally shipped to either Hanford Engineer Works, Richland, Washington, Argonne National Laboratory, Argonne, Illinois, or Du Pont's Chambers Works, Deepwater, New Jersey, for testing, or to Simonds Saw and Steel Company, Lockport, New York, Vulcan Crucible Steel Company, Aliquippa, Pennsylvania, Revere Copper and Brass Company, Detroit, Michigan, or Joslyn Manufacturing and Supply Company, Fort Wayne, Indiana, for rolling. Process residues (dolomite slag, uranium chips, and crucible dross) were shipped to other sites for uranium recovery, storage, or disposal. These sites included the Atomic Energy Commission (AEC) portion of Lake Ontario Ordnance Works (LOOW), Lewiston, New York (now known as the Department of Energy (DOE) Niagara Falls Storage Site), Mallinckrodt Chemical Company, St. Louis, Missouri, Vitro Manufacturing Company, Canonsburg, Pennsylvania, the Du Pont Chambers Works, and Hooker Electrochemical Company, Niagara Falls, New York.

In addition to production of metal from green salt, Electromet recast scrap metal from Simonds, Chapman Valve Manufacturing Company, Indian Orchard, Massachusetts, and American Rolling Mill Company (location unknown). The contract also contained a provision for the conduct of research and development. Some work was done under this provision from April to October 1945. The exact nature of the work is not known, but it may have involved low- and/or high-grade uranium ores.

Production of uranium metal was suspended in August 1946 and resumed in October 1947. On November 30, 1948, Electromet was liquidated as a separate company and became the Electro Metallurgical Division of Union Carbide and Carbon Corporation. All rights, assets, liabilities, and contracts were transferred to Union Carbide. Production continued until September 28, 1949, when the last casting of uranium was conducted. The plant was placed in standby condition two days later.

Electromet also supplied calcium metal to Los Alamos Scientific Laboratory, Iowa State College, and AEC's Santa Fe Yards under contracts W-26-021-Eng-13, AT (30-1)-Gen-137, 160, and 225, and AT-04-1-Gen-55, 56, 57, 78, 91, and 101 (1945 to 1948). In April 1950, the UF_4-to-metal plant was reactivated for casting zirconium metal sponge into ingots for the Naval Critical Requirement program. The work was conducted under W-7405-Eng-14 and funded under AEC contract AT(30-1)-861 with Titanium Alloy Manufacturing Division of National Lead Company (supplier of the zirconium). The plant was returned to standby condition at the completion of the work in September 1950. Portions of the facility were subsequently used under contract AT-(40-1)-1090 between Union Carbide and Carbon Research Laboratories, Inc., and AEC's Oak Ridge Operations Office. This contract directed Union Carbide to conduct research and development on methods of forming metal that would minimize unnecessary machining, finishing, and waste. This work was conducted from January to June, 1951. Although the contract is not specific, the metal involved was probably uranium. Later, just prior to demolition, the building was also apparently used for titanium processing (contract number unknown). AEC involvement at the site ended when contract W-7405-Eng-14 expired on June 30, 1953.

Following the termination of the MED/AEC contracts, Electromet processed ores containing uranium and thorium for commercial use under New York State radioactive material license 950-0139. From August 1965 through April 1972, Union Carbide Corporation produced 505 tons of slag bearing 9212 pounds of thorium dioxide and 1293 pounds of uranium oxide. This slag material was placed in 55-gallon drums and buried in a designated area on plant property in a hole 20 feet deep with 4 to 5 feet of soil cover.

Site Description

The Electromet site is located south of Pine Avenue and east of its intersection with Packard Road (Figure 1). The MED/AEC operations took place in only one building, a one-story cinder block and wood structure that was demolished in 1957. It was located approximately 400 feet east of 47th Street and 400 feet south of Royal Avenue, in an area now occupied by the south end of current Building 166.

Owner History

This facility was part of what is now known as Umetco Minerals Corporation, a subsidiary of Union Carbide Corporation. During the MED/AEC period, the facility was called Electro Metallurgical Company, and was a subsidiary of Union Carbide's predecessor, Union Carbide and Carbon Corporation.

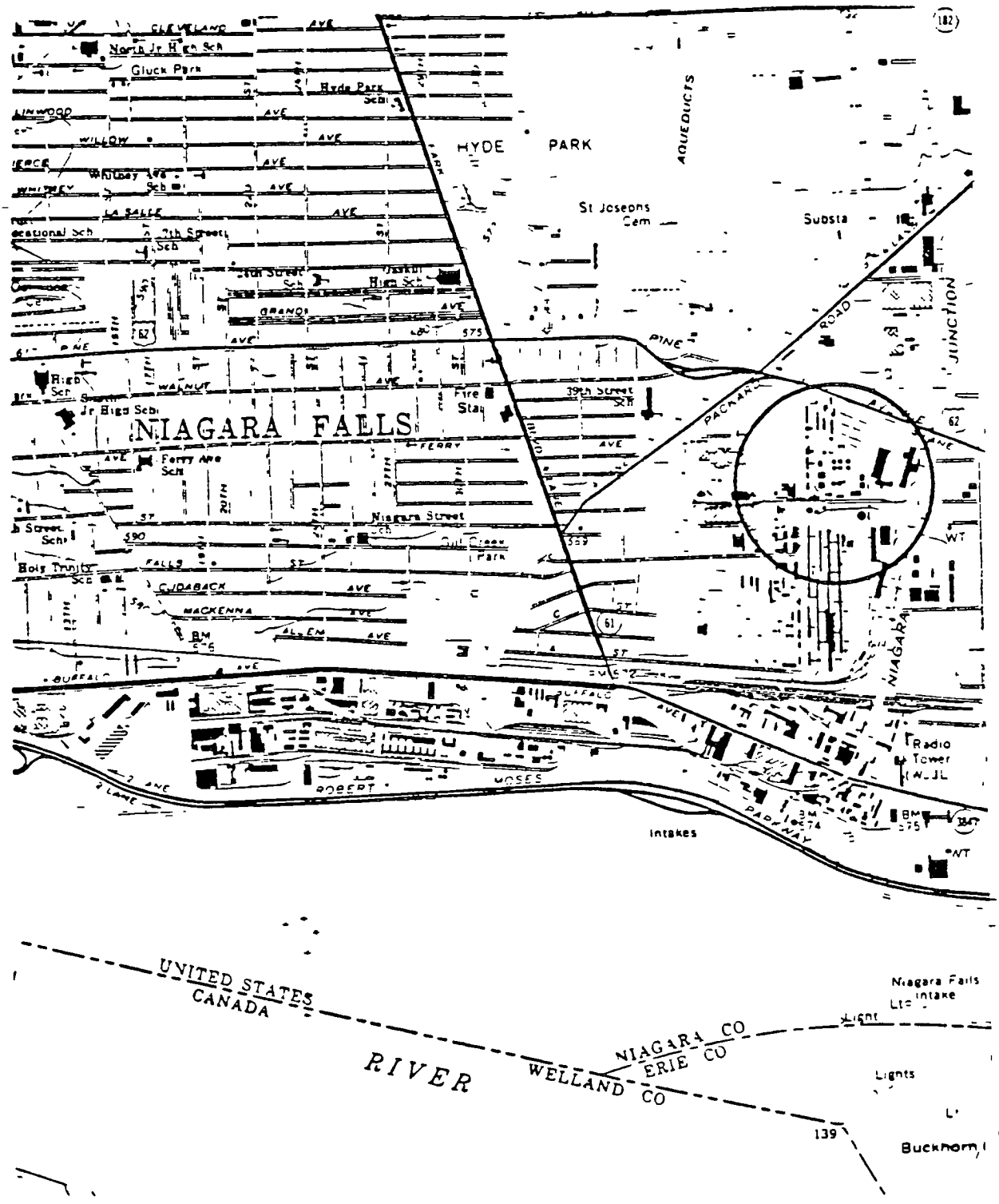

Figure 1. Location of the Former Electro Metallurgical Company in Niagara Falls, New York

Radiological History and Status

At the end of the contract, Electromet purchased the facility from AEC. The plant and equipment were decontaminated through washing, vacuuming, and in some locations, removing concrete floors and wooden platforms. The Health and Safety Division of AEC surveyed the site on August 11 and 14, 1953. Final radiological certification of the condition of the plant and a recommendation to release the facility were made on September 28, 1953. The building was later demolished with debris and uranium processing wastes transferred to the AEC portion of LOOW. In the late 1950s, the wastes from uranium processing were subsequently sent to Oak Ridge National Laboratory (ORNL) for permanent disposal. However, some of the rubble may have been deposited in the old Union Carbide dump (200 to 300 acres located north of Pine Avenue and owned by Newco, now CECOS International, Inc.).

On August 24, 1976, personnel from ORNL and the DOE (then the Energy Research and Development Administration) Oak Ridge Operations Office conducted a screening survey of the site and the old dump. Due to the near-background radiation levels encountered over most of the site, a comprehensive formal survey was not recommended. However, because of elevated (but within guidelines*) beta-gamma readings in the area between Buildings 163 and 166, additional measurements and soil sampling were advised. EG&G, Inc., conducted an aerial radiological survey of the Niagara Falls area in November 1978, and again with more sensitive instruments in September 1979. No radiation anomalies were observed on the Electromet site during either survey.

As a follow-up to the screening survey, ORNL personnel conducted another limited radiological survey on September 24, 1980. They found relatively high concentrations of gamma-emitting radionuclides (above guidelines*) in the thorium-232 and uranium-238 decay chains in the surface soil around Buildings 166 and 163 as well as elsewhere on the site. Residual radioactivity was also identified in cracks and seams in the walls and floor of Building 163. Thorium-bearing ores were used during operations at this site, however, the activities were unrelated to the MED/AEC work. The uranium-238/radium-226 ratio measured in the soil samples indicates natural uranium, whereas the MED/AEC uranium work involved work with uranium metal, i.e., produced after the uranium was separated from its daughters. Thus, the observed uranium contamination was apparently not the result of the MED/AEC conversion and metal-casting operations.

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*U.S. Department of Energy Guidelines for Residual Radioactivity at Formerly Utilized Sites Remedial Action Program and Remote Surplus Facilities Management Program Sites, Rev. 1, July 1985.

Because the radioactivity at the UCC site is unrelated to MED/AEC work, DOE has determined that it has no authority under the Atomic Energy Act of 1954, as amended, to conduct any further activities at the Union Carbide Corporation site. The site has been eliminated from consideration for inclusion in the Formerly Utilized Sites Remedial Action Program. A final elimination report was completed in November 1985. As per DOE policy the Environmental Protection Agency and the State of New York have been notified of DOE's action so that they may take whatever action, if any, they deem appropriate.